oro-genital contact. They also noted three other reports of similar cases. We have observed several cases of *N meningitidis* in heterosexual patients in which there was no history of oro-genital contact.

*Case 1*: A male, 24 years old, complained of purulent discharge and dysuria. A Gram stained smear of the urethral exudate revealed pus cells containing Gram negative intracellular diplococci, of *Neisseria* morphology. Culture of the exudate on Thayer-Martin medium, incubated under microaerophilic conditions produced oxidase positive colonies of gram negative diplococci which fermented glucose and maltose. The isolate was highly sensitive to penicillin, amoxycillin, spectinomycin, cephalexin and erythromycin. No evidence of other sexually transmitted infections were obtained, and serological tests for syphilis were negative.

*Case 2*: A female, 19 years old, contact of a patient who had been previously diagnosed as having a sexually transmitted disease, but not due to *N meningitidis* had a frothy vaginal discharge and pediculosis pubis. Gram stained smears of urethral smear and cervical swabs revealed pus cells containing gram negative intra-cellular diplococci and a mixed flora of extracellular organisms. An oxidase positive Gram negative diplococcus, fermenting glucose and maltose and highly sensitive to penicillin, amoxycillin, spectinomycin, cephalexin and erythromycin was cultured from the exudate on Thayer-Martin medium. *Gardnerella vaginalis* and *Bacteroides* species were also isolated from the cervical swab. Serological tests for syphilis were negative.

*Case 3*: A female, 54 years old, a contact of case number 4, had a purulent vaginal discharge. A Gram stained smear of the urethral and cervical material demonstrated the evidence of pus cells containing gram negative diplococci. Oxidase positive colonies of diplococci fermenting glucose and maltose and sensitive to penicillin, amoxycillin, spectinomycin, cephalexin and erythromycin were cultured on Thayer-Martin medium. Syphilis serology was positive. However, the patient, who was of West Indian origin, had clinical evidence of previous yaws.

*Case 4*: A male, 58 year old husband of case 3, presented with a urethral discharge and testicular pain. On examination, a profuse purulent urethral discharge was present, with no other genital abnormality noted. A Gram stained smear of exudate revealed pus cells containing gram negative diplococci, some intra-cellular. Serology was positive; however, like his wife, there was clinical evidence of a past yaws infection.

Following these cases we examined 300 patients taken at random (male and female) for genital and oral (throat swabs) carriage of *N meningitidis*. No isolates were obtained from genital sites although 47 isolates, approximately 15% of patients, gave positive cultures from throat swabs. These represented a range of serogroups, A, B, C, W135 and non-groupable, with group B predominating.

In the cases discussed the patients denied oro-genital contact, and the married couple (cases 3 and 4) also denied extramarital sex. It is therefore probable that the infection was transmitted by penile-vaginal intercourse.

It was not possible to carry out further tests to confirm the identity of isolates as *N meningitidis*. Occasionally maltose fermenting colonies of *N gonorrhoeae* and maltose negative strains of *N meningitidis* have been reported. These were usually associated with plasmid carriage and penicillin resistance.[2-4] In most cases presented, the antibiotic sensitivity patterns were typical of most isolates of *N meningitidis* found in this country. The infections responded both clinically and microbiologically to the standard treatment regimen of ampicillin 3 g and probenecid 1 g. The high sensitivity to penicillin suggested plasmid carriage was unlikely although this was not examined directly.

These cases were unusual, in that *N meningitidis* produced a clinical picture indistinguishable from that of a gonococcal infection. Furthermore, the case histories strongly suggested that the infections were transmitted by penile-vaginal intercourse rather than by the oro-genital route. The original source of the infection is particularly obscure in the case of the married couple, since neither admitted any extra-marital relationships.

The failure to isolate *N meningitidis* from genital sites in over 300 patients attending our Genitourinary Medicine clinic, even though about 15% of these were carrying the organism in the throat suggested that genital infection is not readily established by this organism. Clearly some additional factor must have predisposed for genital infection in our cases as in the others cited in the literature. The nature of this factor is unknown.

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## Genital herpes diagnosed by cervical cytology

A recent letter in this journal expresses the continuing concern of doctors about neonatal herpes.[1] Careful research will establish the risk, if any, to a neonate born to a mother with a history of herpes, and will clarify the management of these pregnancies.

Genitourinary physicians regularly deal with newborn babies with gonococcal or chlamydial infections. They note the increasing number of cases of HIV infection in babies,[2] and the re-emergence of congenital syphilis in the USA as a major public health problem.[3] Against this background it could be argued that the ill-defined problems of herpes have been given disproportionate attention in the medical press.

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# BOOK REVIEW

**Vaccines for sexually transmitted diseases.** Edited by A Mehuis and RE Spier. London: Butterworths, 1989 (pp 315, £45).

This book contains a report of the proceedings of a conference of the same title held in Oxford in April 1989 that was sponsored by the World Health Organisation and the journal *Vaccine*. It covers general aspects of vaccine development, and also the work on specific sexually transmitted infections. There are chapters on the gonococcus, candida, chlamydia, syphilis, hepatitis B, papillomaviruses, *Herpes simplex* and, not surprisingly, human immunodeficiency virus.

The coverage is typical of a conference proceedings. The papers range from comprehensive review articles to abstracts. The frustration of the lack of information in abstracts is only just offset by finding that the transcripts of discussions are also available.

Its difficult to know who would purchase such a book. There is little new information for the experts in the field, and it is certainly too specialised for most genitourinary physicians. The practising doctor is much more interested in applications of actual vaccines, than the potential of possible ones. At a price of £45 I suspect that it will find a home in the medical school library but will be too expensive for the individual pocket.

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# NOTICES

**Northern Genito-urinary Physicians Group**

The Annual General Meeting will be held in Manchester, 3 November 1990, at the Excelsior Hotel, Manchester airport. The AGM will be preceded by a lecture by Professor Dulcie Coleman, at 11.00 am. Lunch will be served.

Membership is encouraged from all genito-urinary physicians and doctors from allied specialties and is not reserved for residents of the North of England.

For further details of this meeting and membership, please contact:
*President:* Dr D A Hicks, Dept GU Medicine, Royal Hallamshire Hospital, Sheffield, S10 2JF. Telephone 0742 766928 or
*Secretary:* Dr A B Alawattegama, Dept GU Medicine, The University of Liverpool, Royal Liverpool Hospital, Prescot Street, Liverpool L7 8XP. Telephone 051 709 0141 Ext 2635/2902.

**7th Regional conference on STD. Lusaka, Zambia 17–20 March, 1991**

The African Union Against Venereal Diseases and Treponematoses (AUVDT) is an association of scientists working in the field of sexually transmitted diseases in Africa and holds meetings every two years. It will be holding its next biannual regional meeting and international conference on STD in Lusaka, Zambia between 17 and 20 March 1991. The themes of the conference are "STD and the Community" and "AIDS and Policies". In view of the rising antibiotic resistant gonorrhoea, the impact of syphilis on the mother and the child, the resurgence of yaws, and recent pandemic of AIDS, this forthcoming conference will be of vital importance in defining the control strategies for these problems in Africa.

Information may be obtained from Dr S K Hira, Dermato-Venereology Dept, PO Box 50001, Lusaka, Zambia.